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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,618	08/07/2006	Seiichiro Noritake	SAS0033US	7124
23413 7590 04/02/2010 CANTOR COLBURN, LLP 20 Church Street 22nd Floor Hartford, CT 06103				
EXAMINER WAITS, ALAN B				
ART UNIT 3656		PAPER NUMBER		
NOTIFICATION DATE 04/02/2010		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

Office Action Summary

Application No.

10/588,618

Applicant(s)

NORITAKE, SEIICHIRO

Examiner

ALAN B. WAITS

Art Unit

3656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4 and 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-06)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tung USP 6789439 in view of Harvie USP 1898956.

Tung discloses a similar device comprising:

Re clm 1

- A gear train part (23, fig 2) having a gear (a part of gear train 23, fig 1; col 2 ln 13-15) which is driven by the motor (21, fig 2)
- A tooth-missing gear (14, fig 2) which is rotationally driven by the gear
- A rack member (13, fig 2) which is linearly driven by the tooth-missing gear
- A tooth-missing gear part (14, fig 2)
- a teeth part (141, fig 2) is formed at a predetermined position of the tooth-missing part over only a part of the entire circumference in a circumferential direction of the tooth-missing gear
- The rack member is provided with a first rack part (the toothed part of 133, fig 2) which causes the rack member to move in one direction when the

motor rotates in one direction and the first rack part engages with the teeth part

- A second rack part (the toothed part of 134, fig 2) which causes the rack member to move in the other direction when the motor rotates in the one direction and the second rack part engages with the teeth
- The first rack part and the second rack part are extended in parallel to each other so as to interpose the tooth-missing gear between the first rack part and the second rack part (fig 2)
- One end portion of the first rack part and one end portion of the second rack part are connected with each other through a connecting part (13 where 132 connects, fig 2)
- An other end portion (left half of 133, fig 2) of the first rack part and an other end portion (right half of 134, fig 2) of the second rack part are separated from each other so as to form a separated space (gap between 133 and 134, fig 2) between the other end portions of the first rack part and the second rack part

Although Tung does indeed disclose a gear train (23, fig 2), he does not specifically disclose:

- The tooth-missing gear is provided with a gear part formed with teeth around an entire circumference and structured to engage with the gear
- The gear is disposed on an opposite side to the connecting part with respect to the tooth-missing gear

Harvie discloses a similar reciprocating motion device comprising:

- The tooth-missing gear (25 and 27, fig 4) is provided with a gear part (27, fig 4) formed with teeth around an entire circumference and structured to engage with the gear\
- The gear is disposed on an opposite side (fig 1, 27 is disposed opposite the reciprocating arm 132 in Tung and 23, fig 1 in Harvie) to the connecting part with respect to the tooth-missing gear

for the purpose of driving the tooth-missing gear.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Tung and provide:

- The tooth-missing gear is provided with a gear part formed with teeth around an entire circumference and structured to engage with the gear
- The gear is disposed on an opposite side to the connecting part with respect to the tooth-missing gear

for the purpose of driving the tooth-missing gear.

Tung in view of Harvie further discloses:

- The gear is engaged with the gear part of the tooth-missing gear through the separated space (location of 27 of Harvie would be in the separated space of Tung, fig 2)

Re clm 2

- The tooth-missing gear part is in a non-engagement state with the second rack part when the tooth-missing gear part engages with the first rack part

and the tooth-missing gear part is in a non-engagement state with the first rack part when the tooth-missing gear part engages with the second rack part (fig 2)

Re clm 4

- The rack member is provided with a pair of inner side portions (133 and 134, fig 2) between which the gear is disposed and which are extended in parallel to each other
- The first rack part is formed in one of a pair of the inner side portions and the second rack part is formed in the other of a pair of the inner side portions (fig 2)

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tung USP 6789439 in view of Harvie USP 1898956 as applied to claim 1 above, and further in view of JP 2000-320955.

Tung in view of Harvie discloses all the claimed subject matter as described above.

Re clm 6

Tung in view of Harvie does not disclose:

- The driven member is an opening/closing member whose position is changed between an open position and a close position by the rack member

JP955 teaches a similar gear and rack device comprising:

- The driven member (9, fig 2) is an opening/closing member whose position is changed between an open position and a close position by the rack member (abstract)

Since both Tung in view of Harvie and JP995 teach gear and rack devices, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the gear and rack device of Tung in view of Harvie into the device of JP995 and provide:

- The driven member is an opening/closing member whose position is changed between an open position and a close position by the rack member

to achieve the predictable result of linearly actuating a rack relative to a rotating gear.

Response to Arguments

4. Applicant's arguments with respect to claims 1, 2, 4 and 6 have been considered but are moot in view of the new ground(s) of rejection.

The examiner notes that with regard to Applicant's argument that the other end portions of the first rack and the second rack are not shown in the prior art, the Tung reference clearly shows a separated space at an end portion. The limitation is broad enough to incorporate the "closed-loop shape" disclosed in the prior art. Furthermore, the examiner points to the Stiner reference noted in the conclusion of the previous office action as showing the disclosed rack mechanism in the specification (fig 2).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **ALAN B. WAITS** whose telephone number is (571)270-

3664. The examiner can normally be reached on Monday through Friday 7:30 am to 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alan B Waits/
Examiner, Art Unit 3656

/Richard WL Ridley/
Supervisory Patent Examiner, Art Unit 3656